# Scheduling Automation
# Review List

# Task Table

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# TASK 1.0 – PARALLEL CHECKOUTS

**Objective:** To deploy new E-Tag based adjacent control area checkout processes in Preschedule and Real Time that run in parallel with the existing legacy system checkout process. In support of this objective, schedulers will initiate dialog with adjacent control schedulers and BPAT customers to ensure checkout accuracy and improve E-Tag authorship. Automated E-Tag evaluation (Task 2 – Auto-Approve, Auto-Deny) is expected to save schedulers time when preparing E-Tags for parallel checkouts.

**Key Elements:** This task is key to "commercial readiness" (e.g. testing that what is scheduled in Tags will yield the same as that scheduled in RODS). Work is to start at net interchange level for 15 Control Areas and then extend to the individual schedules. The key result here is to assure that a customer gets in Tags what they got in schedules. Preschedule has already begun parallel checkouts and real time will begin parallel checkouts soon. Most defects have been resolved for preschedule but deployment by real time will yield some additional unique fixes.

**Task Prerequisites:**

- ETMS Development and Production Systems access for checkout walkthroughs and training.
- Change Management Process established and operational.
- E-Wheel software in “as is” condition.
- SharePoint documentation management system fully available.

**Task Deliverables:**

- Preschedule performs an E-Tag based adjacent control area checkout each day in parallel with the legacy system checkout.
- Preschedule records comparison data, identifies and documents problems, prepares summary reports that shows daily trends of tag versus schedule checkout results and makes remediation recommendations.
- Real Time performs an E-Tag based adjacent control area check out each hour in parallel with the legacy system checkout.
- Real time records comparison data, identifies and documents problems, prepares summary reports that shows hourly and daily trends of tag versus schedule checkout results and makes remediation recommendations.
- Prepare Schedulers Guidebook that provides rules of thumb for comparing schedules to tags and methods for reconciling differences. This guide will show how to use any and all of the currently available tools for this purpose.

## Subtask 1.1: Deploy Preschedule Parallel Checkout

Perform all activities required to deploy E-Tag based control area checkout for the preschedule desk. Preschedule has already begun this process. New steps will be taken to establish on–going reporting and documentation requirements to produce the deliverables described above.

## Subtask 1.2: Deploy Preschedule Valve Group Parallel Process

Perform all activities required to deploy E-Tag based Valve group entry and checkout for the preschedule desk. New steps will be taken to establish on–going reporting and documentation requirements to produce the deliverables described above.

## Subtask 1.4: Deploy Real Time Parallel Checkout

Perform all activities required to deploy E-Tag based control area checkout for the real time desk. Real time is aware of this subtask and is considering how best to deploy parallel checkouts. New steps will be taken to establish on–going reporting and documentation requirements to produce the deliverables described above.

## Subtask 1.5: Deploy Real Time DC Loss Parallel Process

Perform all activities required to deploy E-Tag based Valve group entry and checkout for the real time desk. Perform initial parallel checkout off-line to validate the process. New steps will be taken to establish on–going reporting and documentation requirements to produce the deliverables described above.

## Subtask 1.7: Refine Checkout Process to Avoid Sanctions

Provide more detail behind the aggregate net checkout figures to increase assurance there is a tag for every schedule. Utilize existing tools to create “best practices” for matching tags to schedules including the use of UID checks with adjacent control areas that schedule by tag and TC Checkouts by tag and by schedule.

## TASK 2.0 – AUTO-APPROVE, AUTO DENY

**Objective:** To deploy automation that will check E-schedule requests (an E-schedule request is what E-Wheel creates from an E-Tag) comply with BPAT's scheduling rules and when successful mark the request as VERIFIED, otherwise mark it as VERIFIED FAILED. This automation will then enable scheduling to either "click approved", "click denied" or have the automation perform these steps automatically. As this automation is deployed these functions are expected to reduce E-Tag approval time significantly which will free up time for other parallel operations.

**Key Elements:** This requires demonstration walkthroughs to prove the process and the ability for the automation to accurately approve or deny tags. This must include a validation of how the automation handles adjust requests. A result of these walkthroughs will also be a test of what falls into the VERIFIED and VERIFY FAILED buckets. The product automation for this task was delivered and tested during the 2003 efforts. Functionality (Task 5.0 – Scheduling Timelines) will supply the switches needed to selectively enable how each type of product automation is deployed in production. The product walkthroughs are expected to yield unique change requests whenever defects or essential business requirements' changes are identified.

**Task Prerequisites:**

- ETMS Development and Production Systems access for checkout walkthroughs and training.
- Change Management Process established and operational.
- E-Wheel software in "as is" condition.
- Portland/PAC Interchange Checkout Issues resolved.
- Timeline Task completion for deployment of selective auto-approval and denial for each product.
- Communications Task complete for any new automation ready for production.
- Job aids to support scheduler interaction with customers.

**Task Deliverables:**

- Schedulers use "click approved" and "click denied" method based on results of automated E-Schedule evaluation into VERIFIED and VERIFY FAILED groups.
- Auto-approval turned on for each product.
- Auto-denial turned on for each product.
- Report on each product tested including when and for what types of tags approved (or denied) for 1-2 weeks of tests.
- Identification of problems for remediation if necessary.
- Sign-off by responsible staff that test is complete and functionality is ready to expose to users.

- Guideline for 1 week of automation by staff including data sheets for reporting hourly and daily production results.

## Subtask 2.1: Product Automation Walkthroughs for Preschedule

Perform a walkthrough for each type of product automation to prove requests correctly fall into the VERIFIED and VERIFY FAILED groups correctly. Also, test that suitable error messages are created when a request fails one or more scheduling checks. The walkthrough process for a specific type of product automation is complete once it is turned on in production and schedulers are using the “right-click and approve or refuse” method to process requests. In addition to walkthroughs for products that have automation in place, consider best methods for handling non-automated products and memo schedules.

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## Subtask 2.2: Auto-Approval Turned On for Preschedule

Once the walkthrough is complete for a specific type of product automation and metrics demonstrate the success of the “right-click and approve or refuse” method, turn on the automated approval process. The automated approval process requires no scheduler action apart from observing requests are processed in a timely fashion.

## Subtask 2.3: Auto-Denial Turned On for Preschedule

Once the auto-approval is complete for a specific type of product automation and metrics demonstrate the success of the automated VERIFY FAILED results, turn on the automated denial process. The automated denial process requires no scheduler action apart from observing requests are processed in a timely fashion.

## Subtask 2.4: Product Automation Walkthroughs for Real Time

Perform a walkthrough for each type of product automation to prove requests correctly fall into the VERIFIED and VERIFY FAILED groups correctly. This walkthrough can be conducted simultaneously with the Preschedule walkthrough. Also, test that suitable error messages are created when a request fails one or more scheduling checks. The walkthrough process for a specific type of product automation is complete once it is turned on in production and schedulers are using the “right-click and approve or refuse” method to process requests. . In addition to walkthroughs for products that have automation in place, consider best methods for handling non-automated products and memo schedules.

## Subtask 2.5: Auto-Approval Turned On for Real Time

Once the walkthrough is complete for a specific type of product automation and metrics demonstrate the success of the “right-click and approve or refuse” method, turn on the automated approval process. The automated approval

process requires no scheduler action apart from observing requests are processed in a timely fashion.

## Subtask 2.6: Auto-Denial Turned On for Real Time

Once the auto-approval is complete for a specific type of product automation and metrics demonstrate the success of the automated VERIFY FAILED results, turn on the automated denial process. The automated denial process requires no scheduler action apart from observing requests are processed in a timely fashion.

# TASK 3.0 –CURTAILMENT FUNCTIONALITY

**Objective:** To assess and document a wide spectrum of curtailment events in real time and evaluate the possibility of using existing tools in E-Wheel for communicating curtailment details via E-Tags.

**Key Elements:** The WECC recently approved new business practices including one stating "E-Tags shall be Curtailed or Reloaded as required in the event of transmission path emergency outages, curtailments or overloads". This business practice is meant to take effect January 1, 2004. This task will document how often curtailments occur now, what paths are affected and how many schedules are affected. Then E-Wheel will be assessed to determine possible methods for compliance with the new WECC business practice.

**Task Prerequisites:**

- Change Management Process established and operational.
- E-Wheel software in "as is" condition.
- Established RODS curtailment process descriptions.
- Availability of historic records describing recent curtailment events.

**Task Deliverables:**

- Document describing recent typical real time curtailments.
- Report describing how existing tools could be used to support initial real time Parallel E-Tag Curtailment Process.
- Initial real time Parallel E-Tag Curtailment Process Recommendation.

## Subtask 3.1: Assess Scope of the Initial Parallel E-Tag Curtailment Process for Real Time

To access and document how may Real Time curtailments are likely to happen in the future year given prior events and knowledge of the changing transmission environment. Further to estimate the number of tags that BPAT had the responsibility to cut and reload due to these curtailments.

## Subtask 3.2: Describe Options for Parallel E-Tag Curtailment Process

To assess and document possible tools that will function to associate a schedule to a tag. This functionality is proposed as a means of supporting a parallel E-Tag Curtailment process. This and other tools will be considered to support a parallel E-Tag curtailment process while running curtailment modules on RODS and using ETMS to communicate with the E-Tag community. A schedule may contain several tags and a tag could point to multiple schedules (stacked tags). An algorithm directing application of the schedule cuts to curtailment of the

associated tags may also be necessary. Known possible tools reside on 3 different systems (i.e., ETMS, TRAM, and RODS).

## Subtask 3.3: Recommend Initial Parallel E-Tag Curtailment Process for Real Time

Prepare an analysis of the options considered in the previous subtask. Document the justification for the recommended option including high level impacts on other future phases of the scheduling automation deployment process.

# TASK 4.0 – REVIEW SCREENS

**Objective:** To review each screen and their individual views for each desk to determine the most appropriate screen set and functionality for production to support WECC requirements.

**Key Elements:** First, the required new or parallel process requirements will be described for each desk. Then the screens delivered for each desk will be evaluated against the process requirements to determine which screens to enable in production and what changes to make to these screens. The review will be performed for the Reservations, Preschedule, Real Time and After the Fact desks.

**Task Prerequisites:**

- ETMS Development and Production Systems access for checkout walkthroughs and training.
- Change Management Process established and operational.
- E-Wheel software in “as is” condition.

**Task Deliverables:**

- Description of new system production process requirements for E-Wheel user interface.
- Specification document describing the results of the screen set evaluation for each desk
- Identification of problems for remediation if necessary
- Reconfiguration of E-Wheel screen set to match production requirements.
- Sign-off by responsible staff that deliverable is complete and functionality is ready to expose to users

## Subtask 4.1: Screen Evaluation for Reservation Desk

Determine production user requirements for E-Wheel, complete the screen evaluation, determine production screen requirements and deploy specified screen set.

## Subtask 4.2: Screen Evaluation for Preschedule Desk

Determine production user requirements for E-Wheel, complete the screen evaluation, determine production screen requirements and deploy specified screen set.

## Subtask 4.3: Screen Evaluation for Real Time Desk

Determine production user requirements for E-Wheel, complete the screen evaluation, determine production screen requirements and deploy specified screen set.

## Subtask 4.4: Screen Evaluation for ATF Desk

Determine production user requirements for E-Wheel, complete the screen evaluation, determine production screen requirements and deploy specified screen set.

# TASK 5.0 – AUTHORSHIP

**Objective:** To apply a strategy of improved authorship with TBL customers in concert with additional internal training and education to ensure the enforcement of the strategy. This will address working internally and externally to tighten up tagging authorship. This will be effected by automated evaluation into VERIFIED and VERIFY FAILED groups and auto-approve and auto deny (e.g., what automatically occurs that customers will see in their E-Tag responses from BPAT). Sharpening authorship - how we approve and deny as well as what the customer sees will be key to the next step of assuring that each schedule, in a parallel system, has an associated tag

**Key Elements:** For this strategy to be successful:
- Management buy in to the approach and provide ongoing support,
- Scheduling must apply consistent methods of E-Tag evaluation and authorship enforcement, and
- BPAT must lead a customer awareness and education program to improve the quality of E-Tag authorship.

**Task Prerequisites:**
- Business Practice Change
- Automation Changes from other tasks

**Task Deliverables:**
- Tag authorship reports
- Revised "E-Tag Evaluation Protocol Checklist"
- Document and present management objectives and organization goals for "Tightening the Noose".
- Prepare and deliver E-Tag 101 for Scheduling Training Course
- Define and manage internal activities for Authorship
- Business Practice Updates and External Postings – Including description of all the necessary protocols and rules that need to be in place for our customers to submit good tags will be written and posed as appropriate. The posting advising our customers of our intent to deny tags will be finalized and posted, and we will start denying tags.
- All the schedulers will be trained and will be approving and denying tags consistently as appropriate.
- E-Tag Web site

## Subtask 5.1: Auto-Denial Communications

Prepare internal and external E-Tag users for the process changes resulting from turning on auto-denial. This will most likely consist of internal and external training, publication of a business practice change notice and provision of appropriate customer feedback and response procedures.

# TASK 6.0 –TIMELINES

**Objective:** To deploy the most recently specified version of the transmission scheduling timeline process as defined by Use Case 100500:

**Key Elements:** It is important to complete this task first as it is a prerequisite for completion of Task 4.0 E-Schedule Request Auto-Approval and Denial. Timeline automation as currently defined is pivotal to the deployment of automated E-Tag request evaluation. Current timeline requirements provide switches that can be configured as required for production without software changes. This will enable automated evaluation to be deployed selectively for the preschedule and real time desks.

**Task Prerequisites:**

- Delivery of new E-Wheel release.
- ETMS Development and Production Systems access for checkout walkthroughs and training.
- Change Management Process established and operational.

**Task Deliverables:**

- Timeline Test Plan
- Report demonstrating successful timeline test results
- Successful walkthroughs for preschedule and real time.
- Any applicable change requests (TARs)
- Signed off functionality recommending turning timeline and auto-approve and auto-deny automation on.

## Subtask 6.1: Preschedule Timeline Walkthroughs

Once the Timeline software has been updated delivered and tested successfully, perform a walkthrough of the timeline switches to confirm intended usage for the preschedule desk. Verify the timeline automation functions as required for each product.

## Subtask 6.2: Real Time Timeline Walkthroughs

Once the Timeline software has been updated delivered and tested successfully, perform a walkthrough of the timeline switches to confirm intended usage for the real time desk. Verify the timeline automation functions as required for each product.

## TASK 7.0 – SYSTEM ADMINISTRATION/TROUBLESHOOTING

**Objective:** To take ownership of system administration for the production use of E-Wheel. This form of system administration refers to the day-to-day and periodic administrative activities needed to maintain scheduling processes. This does not refer to hardware, software or network administration.

**Key Elements:** E-Wheel provides powerful facilities for TMS technical staff to control the way the automation performs. These facilities are provided through a part of E-Wheel called E-Manager. This task will facilitate the knowledge transfer from SoftSmiths to BPAT staff to provide for self-sufficient system administration. E-Wheel also provides on-line troubleshooting tools for analyzing the events related to problem situations. This task will include knowledge transfer in the use of these troubleshooting tools.

**Task Prerequisites:**

- ETMS Development and Production Systems access for checkout walkthroughs and training.
- Change Management Process established and operational.
- E-Wheel software in “as is” condition.

**Task Deliverables:**

- On-line and off-line Help and reference documentation for system administration and troubleshooting.
- Troubleshooting Training Material for Schedulers
- Troubleshooting Training Material for Team Leads
- Troubleshooting Training Material for TMS Technical Staff
- Training Material for Business Process Administration
- Completed Troubleshooting Training for Business Process Administration
- Completed Troubleshooting Training for Schedulers
- Completed Troubleshooting Training for Team Leads
- Completed Business Process Administration Training for TMS Technical Staff

## Subtask 7.1: Troubleshooting Training for Schedulers

Prepare training material and conduct training for schedulers.

## Subtask 7.2: Troubleshooting Training for Team Leads

Prepare training material and conduct training for team leads.

## Subtask 7.3: Troubleshooting Training for TMS Technical Staff

Prepare training material and conduct training for TMS technical staff.

## Subtask 7.4: Troubleshooting Training for Business Process Administration

Prepare training material and conduct training for business process administration. This refers to the data administration tasks like setting preschedule overrides, maintaining the NERC registry and maintaining paths in OASIS. Only business process administration tasks needed to support the tools already in place plus the additions delivered by this project will be in scope.

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## TASK 8.0 – LOSSES

**Objective:** To resolve open business requirement issues, then test and deploy loss payback by E-Tags if practical. Otherwise, complete this activity by preparing a gap analysis report for the "as delivered" loss payback by E-Tag automation.

**Key Elements:** Resolve outstanding issues with the proposed business requirements. If necessary revise the Loss Payback Use Cases and make any remedial changes to the delivered software. Document and track the software changes. The initial point of reference is the existing Loss payback by E-Tag automation requirements:

Perform a loss payback by E-Tag walkthrough to prove how well this level of automation will satisfy production requirements. If appropriate, issue a new business practice under Task 1 Communications and deploy the new process in production.

**Task Prerequisites:**

- ETMS Development and Production Systems access for checkout walkthroughs and training.
- Change Management Process established and operational.
- E-Wheel software in "as is" condition.

**Task Deliverables:**

- Resolution of outstanding issues with existing business requirements.
- Revised Loss Payback Use Case
- Timeline Test Plan
- Report demonstrating successful timeline test results
- Successful walkthroughs for reservation, preschedule and real-time desks.
- Any applicable change requests (TARs)
- Signed off functionality recommending turning timeline and auto-approve and auto-deny automation on.

## Subtask 8.1: Resolve Outstanding Issues with Business Requirements

Facilitate sessions with stakeholders to reach agreement on business requirements for initial production release.

## Subtask 8.2: Loss Payback Automation Walkthrough

Perform loss payback automation walkthrough and document results for each of the desks affected by the change in loss payback practices. Either recommend for promotion to production or place on hold with documentation describing gaps. Parts of this subtask will impact the reservations and real time desks.

## Subtask 8.3: Turn On Loss Payback Automation

Issue business practices change under Task 5.0 Tightening the Noose, provide training and turn on loss payback automation in production. Parts of this subtask will impact the reservations and real time desks.

## TASK 9.0 – REMEDIATION/CHANGE MANAGEMENT

**Objective:** To expedite remediation of deliverables and maintain effective ongoing scheduling operations consistent with WECC requirements and current scheduling practices for tagging. This task will clearly define all proposed changes and the Change Management process designed and implemented recently by TMS.

**Key Elements:** All remediation to deliverables will use the Change Management process recently designed and developed by BPAT.

Change management is an "enabler" for most other tasks in this project that are intended to deliver new automation to production. Consequently, the key performance metric for change management is:

- Rapid turn-around on change requests. Actual performance during the initial weeks of operation the change management cycle time will be closely monitored to facilitate on-time project deliverables.

Other key elements of change management are:

- Formation of a change management team
- Periodic and on demand meetings of the change management team
- Problem reporting using ClearQuest and all its problem reporting and management capabilities.
- Cooperative relationship with the Urgent Production Problem Resolution Process (See Subtask 9.1)

**Task Prerequisites:**

- Established Change Management Process
- Formation of Change Management Team
- Change Management Training complete
- Urgent Production Problem Resolution Process Accepted

**Task Deliverables:**

- Change Requests
- Change request analysis and detail documentation
- Application of change request documentation and management guidelines
- Weekly report of change request status
- Rapid change request evaluation
- Work Authorization recommendations to Project Manager

## Subtask 9.1: Urgent Production Problem Resolution

This is and ongoing process. The process must work while the SA Deployment Project is active. The ability to expedite and manage these changes will be a governing factor determining the life cycle for introducing new changes into production.

## Subtask 9.2: Troubleshooting

This is to support use of the existing system. From time to time, bugs crop up that effect the reliability of functions (such as tags resulting in values 5x's greater than the actual tag that need to be researched and fixed. This task also covers the performance of the system (speed, down time, etc.). Efforts can require investigation of the issue, specification of the exact required fix, costing out, coding, code (version) promotion, final testing, and approval.

## Subtask 9.3: Create, Manage and Resolve TARs

When the change management team assigns a change request to SoftSmiths, it is SoftSmiths role to create TARs, provide effort estimates, perform development and manage the TARs. Each Tar must be cross-referenced to its source using the BPAT ClearQuest request number.

# TASK 10.0 – PERFORMANCE MONITORING AND MANAGEMENT

**Objective:** To document, understand and resolve overall system performance to achieve performance levels equal to or better than required to support successful production operations.

**Key Elements:** Consolidate all known user performance issues. Analyze and document business process performance requirements. Resolve

**Task Prerequisites:**

- Change Management Process established and operational.
- E-Wheel software in “as is” condition.

**Task Deliverables:**

- E-Monitor turned on in production.
- Identification of problems for remediation if necessary.
- Performance monitoring and reporting procedures documented and functioning.
- Organization and procedures to sustain process and system performance.
- Sign-off by responsible staff that the deliverable is complete and functionality is ready to expose to the users.

## Subtask 10.1: Business Process Performance & System Performance

Document overall system and process specific performance requirements. Measure E-Wheel performance against these performance requirements and document results. Prepare change requests. Make software and systems changes to achieve performance objectives and document persistent or outstanding performance exceptions. Introduce a procedure or automated test to periodically monitor and report process performance. Continue use of E-Monitor and introduce other procedures or automation to periodically monitor and report system performance.

## TASK 11.0 – COMPREHENSIVE E-TAG COMMUNICATIONS BACK-UP PLAN

**Objective:** To establish and deploy communications backup procedures for preschedule and real time that meet or exceed the requirements specified in NERC Policy 3, Addendum 3A3.

**Key Elements:** Review the NERC Policy requirements for E-Tag backup procedures when communications failures occur and develop procedures using existing tools to meet or exceed these requirements. Training scheduling teams in the use of the backup procedures.

**Task Prerequisites:**

- Existing NERC Policy.
- E-Wheel software in “as is” condition.
- SharePoint documentation management system fully available.

**Task Deliverables:**

- Preschedule backup procedure
- Real time backup procedure
- Preschedule training completed and signed off
- Real Time training completed and signed off.
- Completion of applicable change requests.